Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of the Claims:

1. (currently amended): A method comprising:

   a) obtaining at least a first nuclease inhibitor, wherein the first nuclease inhibitor is a small molecule and wherein the small molecule is an organic compound comprising a nitrogenous base, an inorganic compound, a salt, or an aromatic structure;

   b) obtaining at least a second nuclease inhibitor;

   c) obtaining a composition; and

   d) admixing the first nuclease inhibitor, the second nuclease inhibitor and the composition to form an admixture;

   wherein nucleases that may be present in the admixture are inhibited.

2. (original): The method of claim 1, wherein admixing is further defined as comprising mixing the first and second nuclease inhibitors to form a nuclease inhibitor cocktail and mixing the nuclease inhibitor cocktail with the composition.

3. (original): The method of claim 1, wherein the admixture comprises at least one nuclease.

4. (original): The method of claim 1, wherein the composition comprises a nucleic acid.

5. (original): The method of claim 1, wherein the composition is further defined as a cell lysis buffer, a tissue lysis buffer, an RNA extraction solution, an *in vitro* translation reaction mixture, a transcription reaction mixture, a reverse transcription reaction mixture or a coupled transcription/translation reaction mixture.

6. (original): The method of claim 1, wherein the composition is a reagent used in molecular biology.

7. (currently amended): The method of claim 1, wherein the ~~first and~~ second nuclease inhibitor[[s]] comprises~~, independently,~~ a small molecule, an oligonucleotide, a proteinaceous compound, or an affinity resin.

8. (original): The method of claim 7, wherein the small molecule comprises an organic compound, an inorganic compound, a salt, or a chaotrope.

9. (original): The method of claim 8, wherein the small molecule comprises an organic compound.

10. (original): The method of claim 9, wherein the organic compound is a hydrophilic or hydrophobic molecule.

11. (original): The method of claim 9, wherein the organic compound is oligovinylsulfonic acid (OVA), aurintricarboxylic acid (ATA), aflatoxin, 2-nitro-5-thiocyanobenzoic acid, iodoacetate, N-bromosuccinimide, p-chloromercuribenzoate, diethyl pyrocarbonate, ethanol, formamide, guanidinium thiocyanate (GdnSCN), dinitrofluorobenzene, decanavanate, polyvinylsufonic acid, hydrobenzoinphosphate, phenylphosphate, putrescine, haloacetate, dinitrofluorobenzene, phenylglyoxal, bromopyruvic, hydroxylamine-oxygen-cupric ion, a vanadyl complex, 8-amino-5-(4'-hydroxy-biphenyl-4-ylazo)-naphthalene-2-sulfonate, 6-hydroxy-5-(2-hydroxy-3,5-dinitro-phenylazo)-naphthalene-2-sulfonate, 3,3'-dimethylbiphenyl-4,4'-bis(2-amino-naphthylazo-6-sulfonate), 4,4'-dicarboxy-3,3'-bis(naphthylamido)-diphenylmethanone, 3,3'-dicarboxy-4,4'-bis(4-biphenylamido) diphenylmethane, or 3,3'-dicarboxy-4,4'-bis(3-nitrophenylamido)diphenylmethane.

12. (original): The method of claim 9, wherein the organic compound is further defined as a nitrogenous base, a chelator, a reductant, or a detergent.

13. (original): The method of claim 12, wherein the organic compound comprises a nitrogenous base.

14. (original): The method of claim 13, wherein the nitrogenous base is purine, pyrimidine, cytidine-N3-oxide 2'-phosphate, 2'CMP, ppAp, Ap3A, Ap4A, Ap5A, ATP, 5'AMP, 5'ADP, 3'UMP, 2'UMP, 2'CMP, pAp (5'P-A-3'P), dUppAp, dUppA2'p, pdUppAp, pTp, pTppAp, TpdA, TppdA, 4-thiouridine 3'p, 5-nitro-uracil, 5-aminoethyl-uracil or (Bromoacetamido)nucleoside.

15. (original): The method of claim 12, wherein the organic compound comprises a chelator.

16. (original): The method of claim 15, wherein the chelator is EDTA, EGTA, BAPTA, Citrate, NTP, dNTP, a citrate ion, or a nucleotide.

17. (original): The method of claim 12, wherein the organic compound comprises a reductant.

18. (original): The method of claim 17, wherein the reductant is TCEP, cysteine, DTT, 2-ME, (+/-)-trans-1,2-bis(2-mercaptoacetamido)cyclohexane (BMC), or Cys-Glu-Cys tripeptide.

19. (original): The method of claim 12, wherein the organic compound comprises a detergent.

20. (original): The method of claim 19, wherein the detergent is SDS, N-laurylsarcosine, deoxycholate, NP 40, Tween 20, or Triton X-100.

21. (original): The method of claim 8, wherein the small molecule comprises an inorganic compound.

22. (original): The method of claim 21, wherein the inorganic compound is a metallic ion or a complex comprising Mg^{+2}, Mn^{+2}, Zn^{+2}, Fe^{+2}, Ca^{+2}, or Cu^{+2}.

23. (original): The method of claim 8, wherein the small molecule comprises a salt.

24. (original): The method of claim 23, wherein the salt is a monovalent or multivalent salt.

25. (original): The method of claim 23, wherein the salt is NaCitrate, NaCl, $(NH4)_2SO_4$, or KCl.

26. (original): The method of claim 8, wherein the small molecule comprises a chaotrope.

27. (original): The method of claim 26, wherein the chaotrope is SCN^-, Li^+, ClO_4^-, or guanidinium.

28. (original): The method of claim 7, wherein the oligonucleotide is an RNA or DNA oligonucleotide.

29. (original): The method of claim 7, wherein the oligonucleotide is an aptamer, a competitive inhibitor comprising a ribonucleoside, a deoxyribonucleoside, a dideoxyribonucleoside, a thiol-containing RNA, or a DNP-poly(A).

30. (original): The method of claim 7, wherein the proteinaceous compound comprises a peptide, a polypeptide, or a protein.

31. (original): The method of claim 7, wherein the proteinaceous compound is an RNase inhibitor protein, a protease, a tyrosine-glutamate copolymer, or RraA.

32. (original): The method of claim 31, wherein the proteinaceous compound is an RNase inhibitor protein obtained from a human, a chimpanzee, a rat, a mouse, a pig, yeast, or by recombinant means, or derivatives therein.

33. (original): The method of claim 31, wherein the proteinaceous compound is a protease and wherein the protease is proteinase K, subtilisin, an alkaline proteases, an acid protease, or a pancreatic proteases.

34. (original): The method of claim 7, wherein the affinity resin is sulfopropyl sepharose or SP sulfopropyl cation exchange resin.

35. (original): The method of claim 7, wherein the proteinaceous compound is an antibody.

36. (original): The method of claim 35, wherein the antibody is a soluble anti-nuclease antibody.

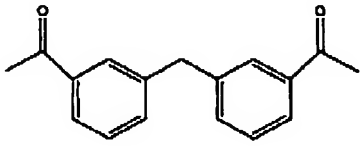
37. (original): The method of claim 35, wherein the antibody is an anti-RNase antibody.

38. (original): The method of claim 37, wherein the anti-RNase antibody is an anti-RNase T1 antibody or an anti-RNase 1 antibody.

39.-44. (canceled)

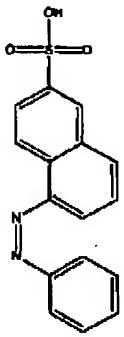
45. (currently amended): The method of claim [[42]] 7, wherein the small molecule comprises an aromatic structure.

46. (original): The method of claim 45, wherein the aromatic structure is:

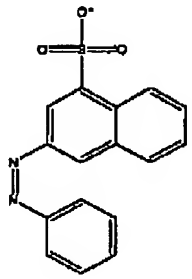


47. (currently amended): The method of claim [[42]] 45, wherein the aromatic structure is a polycyclic aromatic structure.

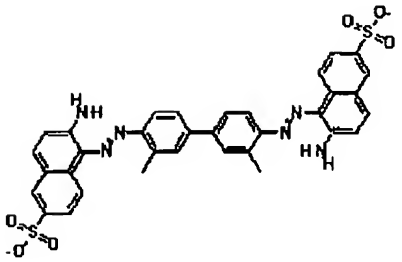
48. (original): The method of claim 47, wherein the polycyclic aromatic structure is:

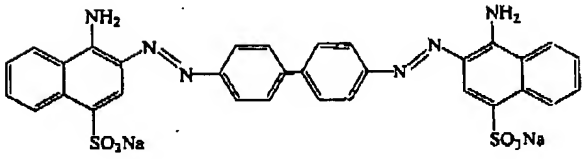


or

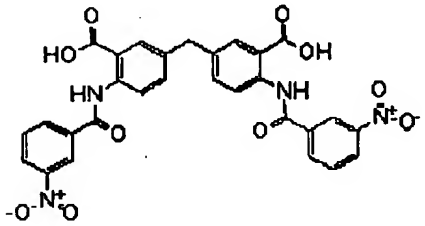


49. (currently amended): The method of claim [[42]] 45, wherein the small molecule comprises the following structure:





, or



50.-56. (canceled)

57. (currently amended): The method of claim [[56]] 45, wherein the ~~first or second~~ small molecule[[s]] comprises a structure selected from the group consisting of NCI-65828, NCI 65845, benzopurpurin B, NCI-65841, NCI 79596, NCI-9617, NCI-16224, suramin, direct red 1, NCI-7815, NCI-45618, NCI-47740, prBZBP, NCI-65568, NCI-79741, NCI-65820, NCI-65553, NCI-58047, NCI-65847, xylidene ponceau 2R, eriochrome black T, amaranth, new coccine, acid red 37, acid violet 7, NCI-45608, NCI-75661, NCI-73416, NCI-724225, orange G, NCI 47755, sunset yellow, NCI-47735, NCI-37176, violamine R, NCI-65844, direct red 13, NCI-45601, NCI 75916, NCI-65546, NCI-65855, NCI-75963, NCI-45612, NCI-8674, NCI-75778, NCI-34933, NCI-1698, NCI-7814, NCI-45550, NCI-

77521, cefsulodin, NCI-174066, NCI-12455, NCI-45541, NCI-79744, NCI-42067, NCI-45571, NCI-45538, NCI-45540, NCI-9360, NCI-12857, NCI-D726712, NCI-45542, NCI-7557, S321443, NCI-224131, NCI-45557, NCI-1741, NCI-1743, NCI-227726, NCI-16163, NCI-16169, NCI-88947, NCI-17061, NCI-37169, beryllon II,, CB-0181431, CB-473872, JLJ-1, JLJ-2, JLJ-3, CB-467929, CB-534510, CB-540408, CB-180582, CB-180553, CB-186847, CB-477474, CB-152591, NCI-37136, NCI-202516, CB-039263, CB-181145, CB-181429, CB-205125, and CB-224197.

58. (currently amended): The method of claim 57, wherein the ~~first or second nuclease inhibitor~~ small molecule is NCI-65828.

59. (currently amended): The method of claim 58, wherein the ~~first or second nuclease inhibitor~~ small molecule is a derivative of NCI-65828.

60. (currently amended): The method of claim 59, wherein the derivative of NCI-65828 comprises at least one modification selected from the group consisting of: a reduction of the azo to hydrazido, replacement of the azo by an amide, an attachment of a hydroxyl group to position 6 of the naphthalene ring, an attachment of an electron-withdrawing group to position 6 of the naphthalene ring, replacement of a carbon atom in an aromatic ring with a nitrogen or an oxygen, and a replacement of the hydroxyl group on the biphenyl component with a sulfonate.

61. (original): The method of claim 59, wherein the derivative of NCI-65828 comprises at least one modification selected from the group consisting of: an addition of a hydrogen-bonding group and substitution of a hydroxyl group with an anionic group to the biphenyl component.

62. (original): The method of claim 61, wherein the hydrogen-bonding group is selected from the group consisting of a hydroxyl, an amino, and an amide.

63. (original): The method of claim 61, wherein the anion is selected from the group consisting of a carboxylate, a sulfate, a sulfonate, a phosphate, and a phosphonate.

64. (currently amended): The method of claim 57, wherein the ~~first or second nuclease inhibitor~~ small molecule is CB-473872.

65. (currently amended): The method of claim 64, wherein the ~~first or second nuclease inhibitor~~ small molecule is a derivative of CB-473872.

66. (original): The method of claim 65, wherein the derivative of CB-473872 comprises an addition of at least one of a hydrogen-bonding group selected from the consisting of: a hydroxyl, an amino, a methyldiamino, a hydroxyethyl, an ethyl-N-formamido, a carboxyamido, a carboxy, a 2-oxo-N-piperidinyl, and a *p*-benzoyl.

67. (original): The method of claim 65, wherein the derivative of CB-473872 comprises Structure II or Structure III, and wherein:
R_0 is -H, $-NH_2$, or -OH;
R_3 is -H, $-CH_2OH$, or $CONH_2$;
R_4 is -H, -COOH, or 2-oxo-N-piperidinyl;
R_5 is -H or *p*-benzoyl group.

68. (original): The method of claim 65, wherein the derivative of CB-473872 comprises a replacement of a carbon atom in an aromatic ring with a nitrogen or an oxygen.

69.-73. (canceled)

74. (currently amended): The method of claim [[56]] 45, wherein the ~~first nuclease inhibitor~~ small molecule is benzopurpurin B and the second nuclease inhibitor is an organic compound, an inorganic compound, or a salt.

75.-81. (canceled)

82. (currently amended): A method of performing an *in vitro* translation, transcription, reverse transcription or coupled transcription/translation reaction comprising obtaining a composition, the composition comprising [[a]] the first nuclease inhibitor and a second nuclease inhibitor of claim 1 and placing the composition in an *in vitro* translation reaction, transcription reaction, reverse transcription reaction or a coupled transcription/translation reaction.

83. (currently amended): A solution comprising ~~at least a~~ the first nuclease inhibitor and [[a]] the second nuclease inhibitor of claim 1.

84. (currently amended): A kit comprising [[a]] the first nuclease inhibitor[[, a]] and the second nuclease inhibitor of claim 1 and components for RNA isolation, an *in vitro* translation reaction, a reverse transcriptase reaction, an RNA amplification reaction, DNA removal, or *in vitro* transcription.

85. (new): The method of claim 1, wherein the first nuclease inhibitor is an organic compound comprising a nitrogenous base.

86. (new): The method of claim 85, wherein the nitrogenous base is purine, pyrimidine, cytidine-N3-oxide 2'-phosphate, 2'CMP, ppAp, Ap3A, Ap4A, Ap5A, ATP, 5'AMP, 5'ADP, 3'UMP, 2'UMP, 2'CMP, pAp (5'P-A-3'P), dUppAp, dUppA2'p, pdUppAp, pTp, pTppAp, TpdA, TppdA, 4-thiouridine 3'p, 5-nitro-uracil, 5-aminoethyl-uracil or (Bromoacetamido)nucleoside.

87. (new): The method of claim 1, wherein the first nuclease inhibitor is an inorganic compound.

88. (new): The method of claim 87, wherein the inorganic compound is a metallic ion or a complex comprising Mg^{+2}, Mn^{+2}, Zn^{+2}, Fe^{+2}, Ca^{+2}, or Cu^{+2}.

89. (new): The method of claim 1, wherein the first nuclease inhibitor is a salt.

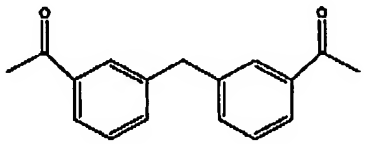
90. (new): The method of claim 89, wherein the salt is a monovalent or multivalent salt.

92. (new): The method of claim 89, wherein the salt is NaCitrate, NaCl, $(NH4)_2SO_4$, or KCl.

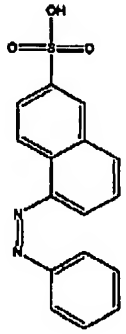
93. (new): The method of claim 1, wherein the first nuclease inhibitor comprises an aromatic structure.

94. (new): The method of claim 93, wherein the aromatic structure is a polycyclic aromatic structure.

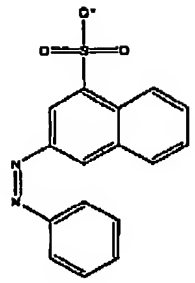
94. (new): The method of claim 93, wherein the aromatic structure is:



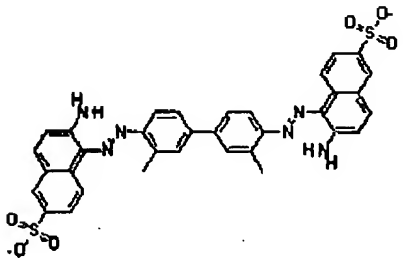
95. (new): The method of claim 93, wherein the aromatic structure is:

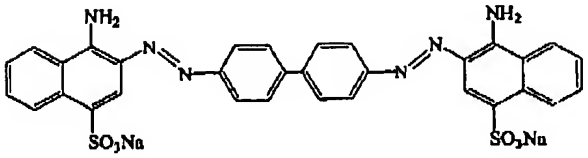


or

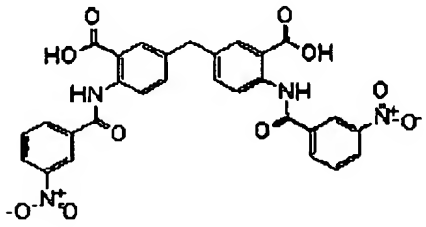


96. (new): The method of claim 93, wherein the aromatic structure is:





, or



97. (new): The method of claim 93, wherein the aromatic structure is selected from the group consisting of NCI-65828, NCI 65845, benzopurpurin B, NCI-65841, NCI 79596, NCI-9617, NCI-16224, suramin, direct red 1, NCI-7815, NCI-45618, NCI-47740, prBZBP, NCI-65568, NCI-79741, NCI-65820, NCI-65553, NCI-58047, NCI-65847, xylidene ponceau 2R, eriochrome black T, amaranth, new coccine, acid red 37, acid violet 7, NCI-45608, NCI-75661, NCI-73416, NCI-724225, orange G, NCI 47755, sunset yellow, NCI-47735, NCI-37176, violamine R, NCI-65844, direct red 13, NCI-45601, NCI 75916, NCI-65546, NCI-65855, NCI-75963, NCI-45612, NCI-8674, NCI-75778, NCI-34933, NCI-1698, NCI-7814, NCI-45550, NCI-77521, cefsulodin, NCI-174066, NCI-12455, NCI-45541, NCI-79744, NCI-42067, NCI-45571, NCI-45538, NCI-45540, NCI-9360, NCI-12857, NCI-D726712, NCI-45542, NCI-7557, S321443, NCI-224131, NCI-45557, NCI-1741, NCI-1743, NCI-227726, NCI-16163, NCI-16169, NCI-88947, NCI-17061, NCI-37169, beryllon II,, CB-0181431, CB-473872, JLJ-1, JLJ-2, JLJ-3, CB-467929, CB-534510, CB-540408, CB-180582, CB-180553, CB-186847, CB-477474, CB-152591, NCI-37136, NCI-202516, CB-039263, CB-181145, CB-181429, CB-205125, and CB-224197.

98. (new): The method of claim 97, wherein the aromatic structure is NCI-65828.

99. (new): The method of claim 98, wherein the aromatic structure is a derivative of NCI-65828.

100. (new): The method of claim 99, wherein the derivative of NCI-65828 comprises at least one modification selected from the group consisting of: a reduction of the azo to hydrazido, replacement of the azo by an amide, an attachment of a hydroxyl group to position 6 of the naphthalene ring, an attachment of an electron-withdrawing group to position 6 of the naphthalene ring, replacement of a carbon atom in an aromatic ring with a nitrogen or an oxygen, and a replacement of the hydroxyl group on the biphenyl component with a sulfonate.

101. (new): The method of claim 99, wherein the derivative of NCI-65828 comprises at least one modification selected from the group consisting of: an addition of a hydrogen-bonding group and substitution of a hydroxyl group with an anionic group to the biphenyl component.

102. (new): The method of claim 101, wherein the hydrogen-bonding group is selected from the group consisting of a hydroxyl, an amino, and an amide.

103. (new): The method of claim 101, wherein the anion is selected from the group consisting of a carboxylate, a sulfate, a sulfonate, a phosphate, and a phosphonate.

104. (new): The method of claim 97, wherein the aromatic structure is CB-473872.

105. (new): The method of claim 104, wherein the aromatic structure is a derivative of CB-473872.

106. (new): The method of claim 105, wherein the derivative of CB-473872 comprises an addition of at least one of a hydrogen-bonding group selected from the consisting of: a hydroxyl, an amino, a methyldiamino, a hydroxyethyl, an ethyl-N-formamido, a carboxyamido, a carboxy, a 2-oxo-N-piperidinyl, and a *p*-benzoyl.

107. (new): The method of claim 105, wherein the derivative of CB-473872 comprises Structure II or Structure III, and wherein:

R_0 is -H, -NH_2, or -OH;

R_3 is -H, -CH_2OH, or $CONH_2$;

R_4 is -H, -COOH, or 2-oxo-N-piperidinyl;

R_5 is -H or *p*-benzoyl group.

108. (new): The method of claim 105, wherein the derivative of CB-473872 comprises a replacement of a carbon atom in an aromatic ring with a nitrogen or an oxygen.

109. (new): A method comprising:

a) obtaining at least a first nuclease inhibitor, wherein the first nuclease inhibitor is an RNA or DNA oligonucleotide;

b) obtaining at least a second nuclease inhibitor;

c) obtaining a composition; and

d) admixing the first nuclease inhibitor, the second nuclease inhibitor and the composition to form an admixture;

wherein nucleases that may be present in the admixture are inhibited.

110. (new): A method comprising:

a) obtaining at least a first nuclease inhibitor, wherein the first nuclease inhibitor is an RNA or DNA oligonucleotide, an aptamer, or a competitive inhibitor comprising a ribonucleoside, a deoxyribonucleoside, a dideoxyribonucleoside, a thiol-containing RNA, or a DNP-poly(A).

b) obtaining at least a second nuclease inhibitor;

c) obtaining a composition; and

d) admixing the first nuclease inhibitor, the second nuclease inhibitor and the composition to form an admixture;

wherein nucleases that may be present in the admixture are inhibited.

111. (new): A method comprising:

a) obtaining at least a first nuclease inhibitor, wherein the first nuclease inhibitor is an affinity resin;

b) obtaining at least a second nuclease inhibitor;

c) obtaining a composition; and

d) admixing the first nuclease inhibitor, the second nuclease inhibitor and the composition to form an admixture;

wherein nucleases that may be present in the admixture are inhibited.

112. (new): The method of claim 111, wherein the affinity resin is sulfopropyl sepharose or SP sulfopropyl cation exchange resin.